IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:)
DE SLOOVERE Xavier et al)
Application Ser. No.10/613.956)
Filed on July 3, 2003)
Composition for combating/repelling)
Insects, birds, dirts and parasites)

Declaration under Art 37 C.F.R. 1.132

I, SIREJACOB Gino, a citizen of Belgium and residing in Evergem (Grovenmansdreef 22, B-9940 Evergem, Belgium) makes the following declaration in support of the above-referenced patent application filed and now pending in the United States Patent and Trademark Office.

1. I am co-inventor of the invention disclosed in application Ser. No. 10/613,956 filed on July 3, 2003, as a CIP application of US10/322,285 filed on December 17, 2002 and claiming the benefit of PCT application PCT/BE02/00149 filed on September 27, 2002.

2. I have carefully read the Office action mailed September 12, 2006, as well as the documents referenced in said Office action.

3. Claim 38 has been elected as species for the further prosecution of said application. Said species is exemplified in Example 16 of the application as filed.

4. Claim 38 has been amended so as to traverse the objection under 35 U.S.C. 112, -second paragraph.

The new amended claim 38 reads now as follows :

"Composition for combating at least one living organism selected from the group consisting of insects, molluscs, acarides, mites, ticks and parasites or for repelling at least one element selected from the group consisting of insects, molluscs, acarides, mites, ticks, dirts and parasites, said composition comprising:

- at least as active agent, at least 7% by weight of ~~hydrophobic~~ silicon (Si) containing particles, said particles:
  - (a) comprising:
    - a hydrophobic coating;
    - ~~with~~ a SiO_2 content of at least 80% by weight; ~~with~~
    - an average primary particle size comprised between 5 and 40nm; and
    - ~~with~~ a BET surface of at least $125m^2/g$; and
  - (b) being selected from the group consisting of kaolinite, montmorillonite, attapulgite, hectorite, smectite, illite, bentonite, halloysite, vermiculite, sepiolite, beidellite, palygorskite, talc, SiO_2, and mixtures thereof; and
- at least two gums selected from the group consisting of guar gum, xanthan gum and scleroglucan."

5. Tests were made under my supervision in order to prove that by making this selection, the best efficiency could be achieved. Said tests were summarised in examples 1, 16 and 18 to 20 of the application as filed. The claimed composition is according to the tests carried out the most preferred composition.

In said tests, various compositions comprising hydrophobic silicon dioxide particles were prepared.

The following hydrophobic coated silicon dioxide particles were used :

AEROSIL R 8200 (sold by Degussa) : particles having a BET surface of 160m²/g, an average primary particle size of 10nm and a carbon content of about 3%, and a modified structure

AEROSIL R 812 (sold by Degussa) : particles having a BET surface of 260m²/g, an average primary particle size of 7nm and a carbon content of about 3%

AEROSIL R 805 (sold by Degussa) : particles having a BET surface of 150m²/g, an average primary particle size of 12nm and a carbon content of about 5%

AEROSIL R 7200 (sold by Degussa) : particles having a BET surface of about 150m²/g, an average primary particle size of about 10 to 15nm, a carbon content of about 5%, and a modified structure.

6. In said tests, dry compositions were first tested. Said tests are disclosed in example 1 of my pending US application (application for which I am co-inventor). From said tests using dry powders, it appears that about 3hours after the treatment with AEROSIL R 7200, the parasites were considered as dead, while about 7 hours after the treatment with AEROSIL R 805, 812 or 8200, the parasites were considered as dead.

The activity of the said dry powder is thus low.

7. As the AEROSIL application as a powder was moreover quite difficult and even not appropriate, I and the two other co-inventors have searched a way to enable an easier application of the powder, although the low activity of the powder as such.

Aqueous compositions have then been prepared and tested.

Aqueous preparations containing 7 to 25% by weight of hydrophobic AEROSIL particles selected from the group consisting of R805, R812, R7200 and R8200 were prepared and used for coating a surface of a box in which thereafter blood sucking chicken parasites (red blood lices) were placed.

8. The first set of aqueous compositions were prepared by adding only AEROSIL solid particles to water. The particles stayed at the top of the water surface. The composition was unsuitable for coating boxes. Aggregates were formed. When treating the box with such compositions, the box was only provided with aggregates distant from each other, whereby the activity of red blood lices was still high after 1 hour.

9. A second set of aqueous compositions were prepared by adding first one single additive to water, before adding the AEROSIL particles. The prepared aqueous compositions comprised 0.5% of one single additive and 25% by weight of AEROSIL particles. The used additives which were tested were guar gum, xanthan gum, scleroglucan, propylcellulose, methylcellulose, arabic gum, locust bean gum and gellan gum. A phase separation occurred, aerosil particles floating at the surface.

Such compositions were unsuitable for coating boxes, as aggregates were formed on the coated surface, said aggregates being distant from each other. 5 hours after placing red blood lices in the coated boxes, lices were still active.

10. A third set of aqueous compositions were then prepared by using a mix of at least two gums selected from the group consisting of guar gum, xanthan gum and scleroglucan.

Examples of compositions of said third set of compositions are given in the following table :

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Composition of preparations in % by weight, water being the remaining part of the preparations

Preparation	1	2	3	4	5	6
Hydrophobic bentonite Average primary particle size of about 7 to 15 nm	25	15	25			
AEROSIL 7200		10	20	20	25	15
Xanthan gum	0.2	0.1	0.1	0.2	0.5	0.5
Guar Gum	0.2	0.1	0.1	0.2	0.5	0.5
Scleroglucan gum		0.1				0.2
PVP	0.1	0.1	0.1		0.2	0.1

Preparation	7	8	9
Other hydrophobic particles			7% hydrophobic bentonite (alkyl ammonium coating, average primary particle size of 12nm) + 6% hydrophobic hectorite (alkyl ammonium coating, average primary particle size 10-40nm)
AEROSIL 8200	7	10	10
Xanthan gum	0.08	0.06	0.4
Guar Gum	0.08	0.06	
Scleroglucan gum		0.06	0.2
PVP	0.1	0.1	

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Said preparations were prepared by first mixing the gums and possibly the PVP with water and then by adding and mixing the hydrophobic nanoparticles. The preparations were stable, enabling an easy coating of boxes.

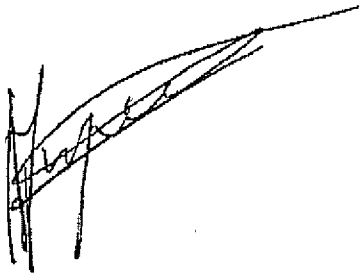
Blood sucking chicken parasites (red blood lices) were placed in the coated boxes. After 10 minutes, the lices were substantially no more active, the red blood lices being considered as dead.

11. Without making tests, some of said tests being disclosed in the application as filed (see examples 16 and 18 to 20), I was not able to predict such an excellent working for combating parasites such as red blood lices. Said better efficiency is achieved by selecting a mix of at least two gums selected from the group consisting of xanthan gum, guar gum and scleroglucan.

Even, after carefully reading Ward et al 6093681 and Ochmogo et al 6358909, it was unexpected for me that the use of such a specific mix of gums could improve the efficiency of hydrophobic silicon containing particles, As shown in tests made under my supervision (see examples 1 and 15 of the application as filed), the use of hydrophobic SiO_2 particles in dry powder form has a low efficiency, as the bloodsucking chicken lices and mites were dead about 3 hours after the begin of the treatment.

12. I hereby declare that all the statement made herein of my own knowledge are true and that all statements made on information and belief to be true, and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine and imprisonment.

Done at Evergem (Belgium), January 12, 2007



Gino Sirejacob
Co-inventor